REMARKS/ARGUMENTS

Reexamination of the captioned application is respectfully requested.

A. SUMMARY OF THIS AMENDMENT

By the current amendment, Applicants basically:

1. Editorially amend the specification.
2. Cancel claims 1-30 without prejudice or disclaimer.
3. Add new claims 31-57 (see Remarks section B infra).
4. Respectfully traverse all non-prior art rejections by presentation of the new claims (see Remarks section B infra).
5. Respectfully traverse all prior art rejections (see Remarks section C infra).
6. Advise the Examiner of the simultaneous filing of a Petition to Extend.

B. THE NEW CLAIMS

New independent method claim 31 resembles original independent claim 1, but is written to emphasize computer implementation. New dependent claims 32 – 36 basically correspond to original dependent claims 2 – 6.

New independent method claim 37 resembles original independent claim 8, but is written to emphasize computer implementation. New dependent claims 38 – 42 basically correspond to original dependent claims 9 – 13, respectively.

New independent claim 43 is a computer program product independent claim which has subject matter comparable to original independent claim 15. New dependent claims 44 – 48 basically correspond to original dependent claims 16 – 20, respectively.

New independent claim 49 is directed to a computer and has subject matter comparable to original independent claim 21.

New independent claim 50 is a computer program product independent claim which has subject matter comparable to original independent claim 22.

New independent claim 51 is directed to a computer and has subject matter comparable to original independent claim 22.

New independent claim 52 is directed to a mobile user terminal. The dependent claims 53 – 57 depend from new independent claim 52.

Support for the new independent claims reside, e.g., in specification paragraphs 26, 89, 170-175, 177, 189, 196, 206, 217, 224-225.

C. PATENTABILITY OF THE CLAIMS

Claims 1, 6-8, 13-15, 20-22 and 27-30 stand rejected under 35 USC 102(b) as being anticipated by U.S. Patent 6,636,222 to Valmiki et al. All prior art rejections are respectfully traversed for at least the following reasons.

Valmiki discloses a method involving:

determining a color codeword (window color, Fig. 6) that is a representation of the colors of multiple image elements (column 15, lines 29-33);

determining an alpha codeword (window alpha, Fig. 6) that is a representation of the alpha values of the multiple image elements (column 15, lines 34-35; column 16, lines 1-2);

providing an alpha modifying codeword (alpha type, Fig. 6) that is a representation of a set of multiple alpha modifiers for modifying an alpha value generated based on the alpha codeword (column 15, lines 43-67; column 16, lines 2-12).

However, Valmiki does not disclose, e.g., the selection, for each image element in the image block, of an alpha modifier index associated with an alpha modifier from the alpha modifier set.

There is actually no choice whatsoever regarding alpha modifiers for the image elements disclosed in Valmiki. In clear contrast, four different Valmiki alpha modes or types are possible for selecting alpha modifiers (column 15, lines 43-45). In the first Valmiki mode, i.e. alpha type=00_{bin}, the alpha modifiers are selected from chroma keying (column 15, lines 45-47). This means that the respective colors of the image elements are used for determining whether the image elements should be opaque (alpha modifier= 1.0) or transparent (alpha modifier=0.0). There is consequently no independent selection of alpha modifiers for the image elements in this alpha mode as the alpha modifiers are dictated by the colors. No alpha modifier indices are selected and included in the compressed representation of the image block in this mode.

This mode is highly inflexible as there is generally no connection between the two different properties, color value vs. alpha value. Therefore the determination of alpha modifiers according to Valmiki based on the colors for the image elements can lead to low quality and low peak signal to noise ratios (PSNR) as the alpha values are dictated by the color values even though there is no general connection between a color of an image element and its transparency.

Correspondingly, in the Valmiki second alpha mode, i.e. alpha type 10_{bin}, the alpha modifiers are derived from the luminance. This embodiment is actually similar to the first embodiment above as colors of image elements can either be represented in the red, green, blue (RGB) space or as luminance and chrominance values, such as in the YUV space. Therefore, the colors of the image elements are first converted from the RGB space into the YUV space and then the luminance values (in the range from 0.0-1.0) resulting from the conversion are used as alpha modifiers (column 15, lines 59-64).

This alpha mode has the same limitations and short-comings as the first alpha mode discussed above. Thus, no independent selection of alpha modifiers are indeed

possible according to this alpha mode of Valmiki. In clear contrast, the alpha modifiers are dictated by the luminance values, which in turn are defined by the colors of the image elements.

Valmiki's lack of general correlation between color value and alpha value also applies to luminance values. Thus, limiting alpha modifiers to be dictated by luminance values can cause low PSNR values. No alpha modifier indices are selected or provided in the compressed representation of the image block in this mode.

The Valmiki third alpha mode, i.e. alpha type 11_{bin}, uses a single alpha modifier for all image elements (column 15, 64-67). No selection of alpha modifiers and associated alpha modifier indices are consequently possible with this alpha mode.

The Valmiki fourth and final alpha mode, i.e. alpha type 01_{bin}, indicates that the alpha modifiers should be derived from a color look-up table (CLUT) (column 15, lines 57-59). As is well known to the person skilled in the art, a CLUT is merely a memory saving device circuit that uses an input sequence, here the alpha type 01_{bin}, to retrieve more data. The CLUT therefore comprises RGBA values or YUVA values (see Table 1). The value 01_{bin} is fixed for this alpha mode and is consequently used as CLUT look-up index. This means that given a CLUT the same alpha modifier will always be retrieved and used for all image elements as the CLUT look-up index is always 01_{bin}.

In Valmiki, no individual selection of alpha modifiers and associated alpha modifier indices are therefore possible for the multiple image elements in the alpha mode.

Thus, Valmiki has no disclosure or even hint of allowing image element-specific alpha modifiers for the multiple image elements and where these alpha modifiers are selected from the alpha modifier set. Therefore, Valmiki does not disclose the selection of alpha modifier indices for the image elements, where these alpha modifier indices are associated with the respective alpha modifiers selected for the image elements.

Valmiki is in clear contrast incompatible with this independent choice of alpha modifiers on image element basis as Valmiki consistently discloses using fixed alpha modifiers (mode 01_{bin} and 11_{bin}) used for all image elements or alpha modifiers (mode 00_{bin} and 10_{bin}) dictated by the color values of the image elements.

The method of independent claim 31 can achieve vastly higher PSNR values as compared to Valmiki by releasing the alpha modifier selection from the color values of the image elements as there is generally no connection between the two fundamentally different pixel properties color and alpha (transparency).

New method claim 31 is therefore clearly novel over Valmiki. Additionally, as none of the alpha modes/types according to Valmiki is compatible with the independent selection of alpha modifiers and indices and there is no guidance therein that this lack of freedom in selecting alpha modifiers should lead to quality problems, new claim 31 is also regarded as not being obvious for the person skilled in the art.

Additionally, Valmiki does not disclose dividing an input image into image blocks comprising image elements or pixels. In clear contrast, Valmiki relates to a window-based graphical user interface. In these window-based GUI, such as Mac OSX and Windows Vista, texture mapping is used to draw windows. A texture is an example of an image made up of image blocks. The person skilled in the art therefore does not regard a window as processed according to Valmiki as an image block. However, irrespective of this interpretation of image block versus window, claim 31 is regarded as being novel and non-obvious as thoroughly discussed in the foregoing.

The same discussion applies to the corresponding computer program product claim 43 and computer claim 49.

Regarding claim 37, Valmiki discloses a processing method involving:

providing a set of multiple alpha modifiers based on an alpha modifying codeword (alpha type, Fig. 6; column 15, lines 43-67);

generating a color representation based on a color codeword (window color, Fig. 6;

column 15, lines 29-33);

generating an alpha representation based on an alpha codeword (window alpha, Fig. 6; column 15, lines 34-35; column 16, lines 1-2);

modifying the alpha representation based on an alpha modifier (column 16, lines 2-12).

However, Valmiki does not disclose the selection of an alpha modifier from the alpha modifier set based on the alpha modifier index sequence. As has previously been discussed in connection with the new claim 31, there are no alpha modifier indices or any sequence of such alpha modifier indices in Valmiki. In clear contrast, fixed alpha modifiers used for all image elements or having color-derived alpha modifiers are used in the cited document.

The invention as defined by claim 37 is therefore novel over Valmiki.

There is further no obvious modification to Valmiki that would guide the person skilled in the art towards the solution adopted by the invention as the alpha modes disclosed by Valmiki and the window descriptors defining the graphics window display information is defined to include the alpha type data. Alpha type is merely a 2-bit word and can consequently not be modified to include alpha modifier indices to all the image elements that are co-processed according to Valmiki.

Thus, this non-obvious difference between the Applicants' independent claims and Valmiki cannot be bridged through any obvious modification by the person skilled in the art of Valmiki. The difference further allows significant higher PSNR than using the fixed or color-defined alpha modifiers of Valmiki.

Independent claim 37 is consequently regarded as not being obvious to the person skilled in the art.

The same discussion applies to the corresponding computer program product claim 50, the computer claim 51 and the mobile user terminal claim 52.

As shown by the above analysis, the Valmiki does not render the new claims unpatentable. There is no disclosure of the claimed subject matter, nor is the claimed subject matter rendered obvious. The rejections should be withdrawn.

D. **MISCELLANEOUS**

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. A formal indication of allowability is earnestly requested.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,
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